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## ABSTRACT

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The present invention relates to the systematic, and possibly repeated, acquisition of several distinct quantities with a view to their exploitation by a user system, this acquisition being effected by means of a multiplexer (2) with staged architecture not having all of its inputs hard-wired. In such a case, the multiplexer is addressed, at the level of each of its stages (30, 31, 32) by an elementary counter (11, 12, 13) chained with the elementary counters catering for the addressing of the lower stages. The scanning of the inputs is achieved by regularly incrementing the chain of counters. If no precaution is taken, all the inputs of the multiplexer (2) are scanned without taking account of their possible absences. It is proposed to remedy this drawback by using a first elementary counter (11, 14) for the addressing of the first stage of switches having an adjustable counting capacity, by equipping the elementary counters for the addressing of the intermediate stages of switches with controllable shunting circuits and by reconfiguring the global counter, at the end of each counting cycle of the first elementary counter (12), with the aid of commands for adjusting the capacity of the first elementary counter, and for activating or inhibiting the shunting circuits (15), these commands being stored in the form of a string of instructions executed one by one.

Fig. 2